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AGENDA ITEM 5

TO: MEMBERS OF THE BENEFITS AND PROGRAM ADMINISTRATION COMMITTEE

I. SUBJECT: Establishment of Actuarially Assumed Investment Return

II. PROGRAM: Actuarial & Employer Services

III. RECOMMENDATION: The Committee accept and recommend to the full Board that the annual investment return used in the actuarial valuations remain unchanged at 7.75%

IV. ANALYSIS:

Background

Actuarial valuations are performed annually to determine plan liabilities and the contribution rates necessary to adequately fund them. To perform actuarial valuations, actuaries use various demographic and economic assumptions to set a contribution schedule of employee and employer contributions designed to accumulate with interest to equal the total present value of benefits by the time every member has left employment.

The primary economic assumption is the investment return assumption. The current assumption is 7.75%. The investment return assumption used for actuarial valuations is comprised of a real return assumption and an inflation assumption. The current inflation assumption is 3.0% per year. This rate of inflation was adopted by the Board in April 2004. See Attachment 1 for a copy of the April 2004 agenda item. The current real return assumption is 4.75%.

Contrary to what some might believe, the current 7.75% assumption is not an arbitrary investment return target. There is a direct relationship between the asset allocation adopted by the Board and the investment return assumption.

Following the Asset/Liability workshop in November, the CalPERS board adopted a new Asset Allocation Policy Mix in December. Because of the direct relationship between the asset allocation and the investment return assumption, a review of the investment return assumption was necessary. The table below shows the current policy mix and the new policy mix.

ASSET ALLOCATION POLICY MIX

Asset Class	**Current Policy**	**Adopted Policy Mix**
Global Equity	60%	56%
AIM	6%	10%
Total Equity	**66%**	**66%**
Global Fixed Income (GFI)	26%	19%
Inflation-Linked Assets (ILAC)	0%	5%
Total GFI and ILAC	**26%**	**24%**
Real Estate	8%	10%
Total	100%	100%

Discussion

The approach used in determining the appropriate investment return assumption was based on guidance setforth by the Pension Practice Council of American Academy of Actuaries in the Actuarial Standard of Practice, *Selection of Economic Assumptions for Measuring Pension Obligations* (ASOP No. 27), adopted September 2007.

Recognizing that there is not one "right answer", the ASOP calls for the actuary to develop a "*best-estimate range*" for the investment return assumption, and then recommend a specific point within that range. The practice council recommends the use of the 25^{th} to 75^{th} percentile range unless it is inappropriate.

Prior to the asset liability workshop, Strategic Investment Solutions, (SIS) provided CalPERS with stochastically generated real rates of return for each asset class. These returns were generated based on assumptions with respect to expected returns, standard deviations and correlations. See Attachment 2 for details.

The data provided by Strategic Investment Solutions, (SIS) consisted of 5,000 simulated real rates of return over a period of 25 years. Those simulated returns were used together with the asset allocation mix adopted by the CalPERS Board to determine the 25^{th} to 75^{th} percentile range of the geometric expected real return. Geometric real rates of return for a selected number of horizons for the 25th, 50th and 75th percentiles are shown in the table below.

	Percentile Results		
Horizon in Years	**25th**	**50th**	**75th**
1	-1.56%	5.56%	13.31%
5	2.10%	5.21%	8.42%
10	2.96%	5.15%	7.40%
25	3.65%	5.15%	6.69%

The median geometric real rate of return of a portfolio based on the current asset allocation is 5.56% for one year. Due to significant volatility in the first year associated with the asset allocation, the range of probable outcomes is quite large. However, as the time horizon lengthens, the range of cumulative compounded results narrows.

Over a twenty-five year horizon, there is a 25% chance that the real investment return will be lower than or equal to 3.65% and a 25% chance that the return will be greater than or equal to 6.69%.

The above investment returns are assumed to be net of investment expenses. The investment return assumption used for actuarial valuations must also reflect expected administrative expenses.

The table below shows the ratio of total administrative expenses to the end of year net assets held in trust for Pension Benefits taken from the CalPERS annual financial reports. Based on the data, the administrative expenses represent approximately 0.11% of the PERF assets.

(Dollars in Thousands)

Year	Admin. Expenses	PERF Assets	Expense Ratio
2007	278,453	251,122,682	0.11%
2006	236,212	211,190,801	0.11%
2005	208,965	189,630,881	0.11%
2004	188,361	167,584,099	0.11%
2003	214,274	144,762,706	0.15%

As mentioned earlier, the investment return assumption used for actuarial valuations is comprised of a real return assumption and an inflation assumption. Below are the percentiles of the expected investment returns using a 25 year horizon, consistent with the assumed 3.0% rate of inflation used in the actuarial valuations and the 0.11% expected plan administrative expenses.

Percentile Results

Components of Return	**25th**	**Median**	**75th**
Expected Real Return	3.65%	5.15%	6.69%
Inflation	3.00%	3.00%	3.00%
Admin. Expenses	-0.11%	-0.11%	-0.11%
Expected Net Investment Return	**6.54%**	**8.04%**	**9.58%**

Based on the ASOP No. 27 guidelines, a reasonable range for the net investment return is from 6.50% to 9.60%. Given that the median investment return is about 8.0%, the current investment rate of return of 7.75% per year is reasonable and should continue to be used.

For comparison purposes, CalPERS actuarial staff reviewed the recent findings in the Public Fund Survey conducted by the National Association of State Retirement Administrators for fiscal year 2006. According to this survey, the most popular investment return assumption was 8.0%. However, the number of plans using an assumption lower than 8.0% has increased. When compared with the assumptions made by other public systems, the assumption of 7.75% is not unusually high, nor unusually low.

V. STRATEGIC PLAN:

The selection of an appropriate investment return assumption supports Goal VIII of the CalPERS' Strategic Plan. The Plan reads as follows:

Goal VIII
Manage the risk and volatility of assets and liabilities to ensure sufficient funds are available, first, to pay benefits and second, to minimize and stabilize contributions.

VI. RESULTS/COSTS:

There is no cost impact. Below is a summary of the results.

Investment Return Assumption

Current Assumption	7.75%
Reasonable Range	6.50% - 9.60%
Recommended Assumption	7.75%

Given the assumed level of inflation, the assumed administrative and investment expenses, and the assumed real rate of return likely to occur over an extended period of time, the recommended actuarial assumed investment rate of return of 7.75% per year is reasonable.

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